

A REVISION OF ORUS CASEY.

I. SUBGENUS LEUCORUS CASEY AND A NEW SUBGENUS
(COLEOPTERA: STAPHYLINIDAE)By LEE H. HERMAN, JR.¹

Casey (1905) differentiated *Leucorus* from the closely related genera *Orus* and *Pycnorus* by an edentate or bidentate labrum and a body color of ". . . always pale ferrugineous . . ." (Casey 1905, p. 192). Species of the other two genera were considered uniformly piceous or black with a quadridentate labrum. Some specimens of two species of *Leucorus* are found, in this revision, to be testaceous and specimens of the subgenus *Orus* to be castaneous or testaceous. The three genera are separated from other *Scopaeina* by the wide neck.

Originally included in *Leucorus* were four species: *L. ferrugineus*, described from a male specimen; *L. rubens*, from a male and female; *L. luridus*, from a female; and *L. ochrinus*, from two females. Two species, *Orus volans* and *Orus cameroni*, were described and included in *Leucorus* by Blackwelder (1943).

Bernhauer and Schubert (1912) included *Leucorus*, *Orus* and *Pycnorus* as subgenera of *Scopaeus* Erichson. Leng (1920) listed these three exclusively new world groups as separate genera but Blackwelder (1939a, 1939b), based on his generic revision of the Paederini, fixed the type-species of *Leucorus*, *Orus* and *Pycnorus* and reduced each of them to subgenera of *Orus* where they remain. *Orus guatemalensis* Sharp, 1886 remained, incorrectly, in *Scopaeus*, was emended (unjustifiably) to *S. guatemalensis* (Bernhauer and Schubert, 1912), and listed as such by Blackwelder (1944).

Measurements used in this paper are taken as follows: the width is of the widest portion; the length of the head is from the anterior portion of the clypeus to the posterior margin of the head; the prothoracic length is the greatest dorsal midline length; and the elytral length is along the midline from the posterior margin of the scutellum to the most posterior margin of the elytra.

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² One species, *Orus (Pycnorus) iowanus* (Casey, 1905), has a prominent gular tubercle. The male is unknown.

³ A male of an undescribed species has a distinctly bidentate labrum but other known males of this subgenus are edentate.

⁴ Females should be identified by reference to illustrations of the spermathecae and ninth terga (figs. 1d-f, 2f-h, 3e-f).

KEY TO THE SUBGENERA OF ORUS

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|----|---|----------|
| 1. | Mesosternal fovea present; postorbital setigerous fovea present (fig. 2e) ----- | 2 |
| | Mesosternal fovea absent; eye with setigerous furrow near eye (fig. 5a) ----- | NIVORUS |
| 2. | Labrum bidentate or edentate; last abdominal sternum of male deeply and narrowly incised (fig. 1a); aedeagus with postforamen present (fig. 1b) ----- | LEUCORUS |
| | Labrum quadridentate; last abdominal sternum of male broadly emarginate; aedeagus with postforamen absent ----- | 3 |
| 3. | Gular tubercle well-developed on male ² ; metafemur of male serrate mesally ---- | PYCNORUS |
| | Gular tubercle absent; metafemur not serrate ----- | ORUS |

Subgenus *Leucorus* Casey

Leucorus Casey, 1905: 191; Bernhauer and Schubert, 1912: 245, 247, 249, 250, 251; Leng, 1920: 104; Blackwelder, 1939a: 24; 1939b: 98, 105, 119; 1943: 230, 277, 278, 279; 1944: 119; 1952: 220, 420; Arnett, 1961: 245, 269.

TYPE-SPECIES: *Orus rubens* (Casey, 1905). Fixed by Blackwelder 1939b: 119, by subsequent designation.

DESCRIPTION. *Head:* quadrilateral appearance in dorsal aspect, sides broadly arcuate, truncate posteriorly; dorsum punctate; gena minutely sculptured; ventral postgena sparsely punctate; gula with microreticulate sculpturing; labrum distinctly bidentate (females) to edentate or bidentate³ (males), median emargination, with long setae; right mandible quadridentate, left mandible tridentate; gular sutures with approximately equal divergence at anterior and posterior, median portion nearly parallel; gula without prominent well-developed tubercle; eye tapered posteriorly (fig. 2e); furrow present above eye; postorbital fovea with setigerous tubercle. *Thorax:* prothorax with distinct, rounded anterior angles on apical third; pronotal punctation distinct, umbilicate, median area impunctate; anterior prosternum rugose; profemur robust, with meso-ventral ctenidia; protibia with scopae; mesopleuron and mesosternum with reticulate sculpturing; mesosternum with large, deep fovea; elytra indistinctly punctate, pleural fold present; scutellum sculptured; metafemur entire; metatibia with ctenidia on one side of apex. *Abdomen:* punctulate; sterna of female unmodified; last two sterna of male modified, last sternum deeply and narrowly incised (figs. 1a, 2a, 3a), mesal margins of incision reflexed. *Aedeagus:* bulbous median lobe; dorso-medial parameres prominent, connate, attenuate distally; with dorso-basal median foramen; dorso-distal ostium; distal elongation of median lobe reflexed; median lobe with ventral, ovate, membranous margined sclerite (figs. 2d, 3d); circoforamen and postforamen present.

DISTRIBUTION: GUATEMALA; UNITED STATES (Illinois, Iowa, Arizona, Kansas, California, Texas, Utah, Colorado, New Mexico).

Included in the material used in this description of the subgenus are three specimens of an undescribed species belonging to *Leucorus*. One of the specimens is a male from Del Rio, Texas; the other two are females from Devils River, Texas.

Male genitalia. The median foramen of members of this genus is more or less surrounded by heavy sclerotization. To facilitate description of the aedeagus, the structure encircling the median foramen is designated here the circoforamen. *Leucorus* has an additional modification of the circoforamen, a thick, hooked structure distad of the median foramen termed here the postforamen.

KEY TO THE DESCRIBED SPECIES OF LEUCORUS

1. Abdominal sterna of penultimate and last visible segments modified ----- (Males) 2
Abdominal sterna unmodified ----- (Females†)
2. Abdominal sternum of penultimate segment without pair of lacinia, with longitudinal median furrow (fig. 2a); parameres broader than median lobe (dorsal aspect) (fig. 2c) ----- RUBENS
Abdominal sternum of penultimate segment with paired lacinia (figs. 1a, 3a); parameres not as broad as median lobe (fig. 1c, 3c) ----- 3
3. Abdominal sternum of penultimate segment with margin between lacinia produced (fig. 3a); paired poststernal lobes present on aedeagus (fig. 3c) ----- GUATEMALENUS
Abdominal sternum of penultimate segment between lacinia with arcuate margin (fig. 1a); poststernal lobes of aedeagus absent ----- FERRUGINEUS

Orus (Leucorus) rubens (Casey)

(FIGS. 2a-h)

Leucorus rubens Casey, 1905:194; Leng 1920:104; Blackwelder 1939b:119; 1943:277; 1952:220.

Scopaeus (Leucorus) rubens (Casey), Bernhauer and Schubert 1912:251.

Orus (Leucorus) rubens (Casey), Blackwelder 1939a:24; 1939b:105.

HOLOTYPE: Iowa (no additional data on label); U. S. National Museum type number 38301; male. The female of the series is labeled as the type but the original description is of a male with a female mentioned in the discussion.

DESCRIPTION OF THE HOLOTYPE. *Leucorus*; male; ferruginous. *Head:* .60 mm. long, .60 mm. wide; dorsum distinctly punctate; postgena adjacent to gula deeply and distinctly punctate; submentum rugose; postorbital fovea well-defined; furrow above quite evident (fig. 2e). *Thorax:* prothorax in dorsal aspect .62 mm. long, .55 mm. wide, sides convergent posteriorly; anterior median posternum glabrous; elytra .57 mm. long, .58 mm. wide. *Abdomen:* median furrow on penultimate sternum, lateral margins broadly arcuate and with moderately heavy setae; posterior sternal margin emarginate, with setae (fig. 2a). *Aedeagus:* median lobe .60 mm. long, .20 mm. wide; poststernal lobes absent; parameres with median portion expanded laterally to nearly as broad as widest portion of median lobe, obtusely aculeate distally; sides of circoforamen convergent posteriorly (dorsal aspect); postforamen prominent (fig. 2c); gradual deflection from postforamen to base of parameres (fig. 2b).

DESCRIPTION OF THE FEMALE. *Spermatheca:* figs. 2g-h. *Ninth tergum* (fig. 2f).

DISTRIBUTION: IOWA, ILLINOIS (Urbana, Mayview), KANSAS (Manhattan), ARIZONA (Santa Rita Mountains, Chiricahua Mountains).

BIOLOGY: At about 5400 feet specimens were taken by light trapping and from the ground litter at South Fork Canyon in the Chiricahua Mountains on July 10 and 11, 1964. Those from the black light were females; four specimens, two of them males, were taken from the ground litter after a limited area had been saturated repeatedly with water. Others have collected this species from ground litter in the Midwest on the following dates: October 15, 1944, September 16, 1944, August 29, 1943 (Illinois); October 2, 1936 (Kansas).

VARIATION: Most specimens are dark ferruginous but several, particularly those from the Midwest, have an orange cast and are not as dark as specimens from the Southwest. The sternal furrow of the penultimate abdominal segment may be deep with very distinct lateral margins to shallow with indistinct, rounded margins; the lateral margins may be broadly arcuate, parallel, or posteriorly divergent. One specimen has a longitudinal prothoracic impression. The anterior gular region may have a small fovea, slight tubercle or be without either structure. The aedeagus exhibits variation in reflection of the apex of the median lobe and degree of deflection from the postforamen to the base of the parameres. The spermathecae of specimens from S.E. Arizona are similar, though smaller, to that of *O. guatemalensis*. The ninth tergum of specimens from various localities may be more or less acute anteriorly but in no case examined was the *O. rubens* type of spermatheca associated with the *O. ferrugineus* type of ninth tergum. Size variation of this species is as follows: head length .54 mm.-.60 mm., width .50 mm.-.60 mm.; prothorax length .54 mm.-.64 mm., width .47 mm.-.59 mm.; elytra length .55 mm.-.69 mm., width .56 mm.-.71 mm.

Orus (Leucorus) ferrugineus (Casey)
(FIGS. 1a-f)

Leucorus ferrugineus Casey, 1905:193; Leng 1920:104.

Scopaeus (Leucorus) ferrugineus (Casey), Bernhauer and Schubert 1912:247.

Orus (Leucorus) ferrugineus (Casey), Blackwelder 1939a:24; 1939b:105.

Leucorus luridus Casey 1905:193; Leng 1920:104. (NEW SYNONYMY).

Scopaeus (Leucorus) luridus (Casey), Bernhauer and Schubert 1912:249.

Orus (Leucorus) luridus (Casey), Blackwelder 1939a:24; 1939b:105.

Leucorus ochrinus Casey, 1905:193. Leng 1920:104. (NEW SYNONYMY).

Scopaeus (Leucorus) ochrinus (Casey), Bernhauer and Schubert 1912:250.

Orus (Leucorus) ochrinus (Casey), Blackwelder, 1939a:24; 1939b:105.

Holotype of *Leucorus ferrugineus* Casey: Arizona; U. S. National Museum type number 38299; male.

Holotype of *Leucorus luridus* Casey: Southern California; U. S. National Museum type number 38298; female.

Holotype of *Leucorus ochrinus* Casey: Cañon City, Colorado; U. S. National Museum type number 38300; female.

DESCRIPTION OF THE HOLOTYPE. Leucorus; male; ferruginous. *Head*: .64 mm. long, .62 mm. wide; dorsum finely punctate; postgena with minute sculpturing, indistinctly punctate; submentum with minute reticulate ground sculpturing; anterior gula with median fovea; furrow above eye reduced; margins of postorbital fovea not well-developed. *Thorax*: prothorax .67 mm. long, .57 mm. wide, sides parallel; elytra .74 mm. long, .80 mm. wide, sides divergent posteriorly. *Abdomen*: penultimate sternum with lacinia and shallow, smooth-bottomed, median depression; posterior

margin of depression not produced between lacinia; depression margined laterally with heavy setae, tapering and diminishing anteriorly; lacinia short, broad, clothed with heavy setae and with mesal overlap of depression (fig. 1a). *Aedeagus*: median lobe .56 mm. long, .20 mm. wide; poststrial lobes absent; parameres acuminate, broadest medially; sides of circoforamen, in dorsal aspect, convergent to postforamen; deflection from postforamen to base of parameres gradual (figs. 1b, c).

DESCRIPTION OF THE FEMALE. *Spermatheca*: fig. 1e, f. *Ninth tergum*: fig. 1d.

DISTRIBUTION: ARIZONA (Santa Rita Mountains, Chiricahua Mountains, Galiuro Mountains, Pajarito Mountains (Peña Blanca)); CALIFORNIA (Azusa, Argus Mountains, Pasadena, Panamint Mountains, Kern County); UTAH (American Fork); NEW MEXICO (Las Vegas H.S.); COLORADO (Cañon City, Colorado Springs).

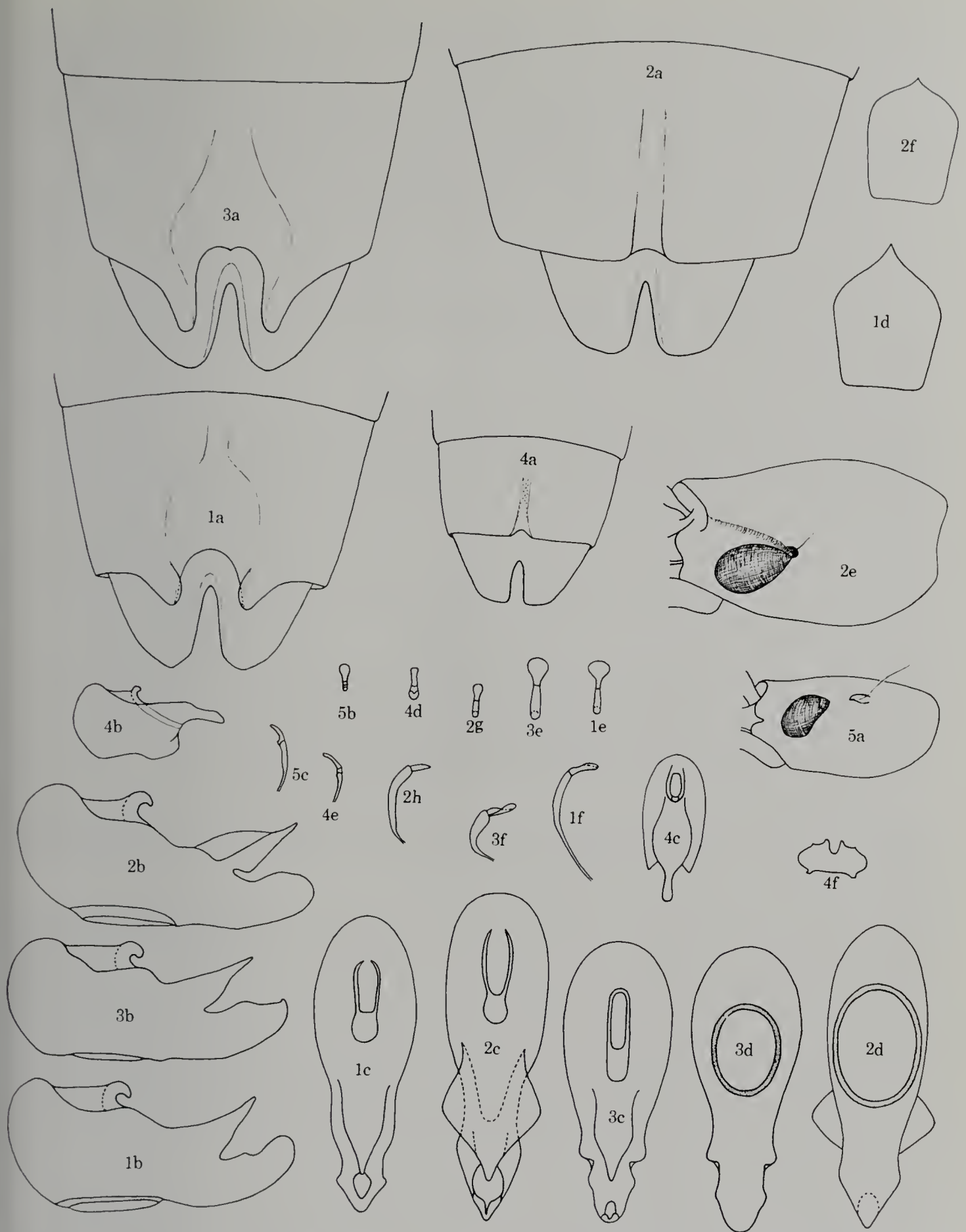
COLLECTION DATA: Santa Rita Mountains in May; Panamint Mountains in April; Chiricahua Mountains in June and July; Peña Blanca on July 26, 1964 at a black light; Galiuro Mountains in May; Azusa in September; Pasadena in February; American Fork in May.

VARIATION: The color varies from ferruginous to testaceous; two testaceous specimens were collected at the same time and place (Chiricahua Mountains) as a ferruginous specimen. Most specimens are lacking the gular fovea and in one case it is replaced by a slight tubercle. The depression of the penultimate abdominal sternum of the male may have nearly parallel lateral margins, be very shallow with indistinct lateral margins, or be very deep and distinctly margined. The bottom of the depression may be glabrous or partly to completely covered with minute ground sculpture. The length and width of the lacinia vary moderately. Variation of the aedeagus is in the degree of deflection between the postforamen and base of the parameres. No variation was found in the ninth tergum of the females and the spermatheca varies in only one case. In the type specimen of *O. ochrinus*, the spatulate portion of the spermatheca was not expanded laterally as much as in the paratype from the same locality and other females of *O. ferrugineus* but the ninth tergum of the holotype does not vary from that of the other females. Size variation is as follows: head length .57 mm.-.65 mm., width .53 mm.-.66 mm.; prothorax length .58 mm.-.67 mm., width .50 mm.-.69 mm.; elytra length .57 mm.-.74 mm., width .63 mm.-.75 mm.



FIGURES 1a-f, *Orus ferrugineus*. a—Abdominal sterna, male; b—Aedeagus, lateral view; c—Aedeagus, dorsal view; d—Ninth tergum, female; e—Spermatheca, basal end; f—Spermatheca, lateral view.

FIGURES 2a-h, *Orus rubens*. a—Abdominal sterna, male; b—Aedeagus, lateral view; c—Aedeagus, dorsal view; d—Aedeagus, ventral view; e—Head, lateral view; f—Ninth tergum, female; g—Spermatheca, basal end; h—Spermatheca, lateral view.



FIGURES 3a-f, *Orus guatemalensis*. a—Abdominal sterna, male; b—Aedeagus, lateral view; c—Aedeagus, dorsal view; d—Aedeagus, ventral view; e—Spermatheca, basal end; f—Spermatheca, lateral view.

FIGURES 4a-f, *Orus cameroni*. a—Abdominal sterna, male; b—Aedeagus, lateral view; c—Aedeagus, dorsal view; d—Spermatheca, basal end; e—Spermatheca, lateral view; f—Labrum, male.

FIGURES 5a-c, *Orus volans*. a—Head, lateral view; b—Spermatheca, basal end; 3—Spermatheca, lateral view.

DISCUSSION: Casey's *O. ochrinus* and *O. luridus* have been synonymized with *O. ferrugineus* because the spermathecae and ninth terga are virtually identical with those of females determined as *O. ferrugineus* taken in the Panamint Mountains, an area which seems to be out of the range of *O. rubens* and *O. guatemalensis*. In his original descriptions, Casey used, "Elytra much longer and wider than the prothorax" for *O. rubens* and "Elytra subequal in length to the prothorax and but little wider" for *O. luridus*, *O. ochrinus* and *O. ferrugineus*; this couplet served as the basis for primary separation of *O. rubens* from the others (Casey 1905, p. 192). In a series of *O. ferrugineus*, the elytra are from .067 mm. longer to .067 mm. shorter than the prothorax. Specimens of *O. rubens* show similar results. Application of the above couplet will allow certain specimens of either species to be keyed to the wrong species; this is particularly true of females. In neither the original descriptions nor the type specimens is there a concrete basis for distinction of *O. ochrinus* and *O. luridus* from *O. ferrugineus*. Characters used in the original descriptions of *O. ochrinus* and *O. luridus* can be shown to be individual variation when using a series.

Orus (Leucorus) guatemalensis Sharp
(FIGS. 3a-f)

Orus guatemalensis Sharp, 1886:549, pl. 14, fig. 3.

Scopaeus (Orus) guatemalensis Bernhauer and Schubert 1912:248. (UNJUSTIFIED EMENDATION).

Scopaeus guatemalensis Bernhauer and Schubert, Blackwelder 1944:119.

LECTOTYPE: San Geronimo, Guatemala; British Museum (Natural History); male. The lectotype, designated here, collected by Champion, is the only perfect male of the syntypic series.

DESCRIPTION OF THE LECTOTYPE. *Leucorus*; male; ferruginous. *Head:* .54 mm. long, .54 mm. wide; dorsum distinctly punctate; submentum rugose; labrum slightly produced antero-laterally; furrow above eye quite evident. *Thorax:* prothorax .60 mm. long, .59 mm. wide, sides converging posteriorly; elytra .67 mm. long, .70 mm. wide, parallel sides. *Abdomen:* posterior margin of penultimate sternum with paired lacinia, with smooth surfaced depression; depression broad posteriorly; tapering and diminishing anteriorly, margined laterally by heavy setae, posterior margin slightly produced between lacinia (fig. 3a). *Aedeagus:* median lobe .56 mm. long, .20 mm. wide, with paired postostial lobes; parameres broad medially, obtusely aculeate distally; circoforamen ellipsoidal in dorsal aspect; postforamen prominent; abrupt deflection from postforamen to parameres (figs. 3b-d).

DESCRIPTION OF THE FEMALE. *Spermatheca:* fig. 3e, f. *Ninth tergum:* as in fig. 2f.

DISTRIBUTION: GUATEMALA (Dueñas, San Geronimo).

VARIATION: Specimens may be from ferrugino-piceous to testaceous. But for a deeper median labral incision and the unmodified abdomen, the three females do not differ appreciably from the males. An antero-median gular fovea is present on one specimen. The lacinia of the abdomen of the males vary in length and width. Size variation is as follows: head length .54 mm.-.60 mm., width .52 mm.-.60 mm.; prothorax length .60 mm.-

.64 mm., width .52 mm.-.59 mm.; elytra length .67 mm.-.74 mm., width .67 mm.-.87 mm.

DISCUSSION: Characters used to separate *O. ferrugineus* and *O. guatemalensis* are perhaps questionable. It is conceivable that the characters used are the result of geographical variation, but this cannot be verified at this time because of the lack of specimens from Mexico.

Subgenus *Nivorus* Herman, NEW SUBGENUS

TYPE-SPECIES: *Orus cameroni* Blackwelder. Designated here.

DESCRIPTION. *Head:* quadrilateral in dorsal aspect, sides broadly arcuate, slightly emarginate posteriorly; dorsum and venter very feebly punctulate; labrum with deep median emargination, with long setae, quadridentate, mesal denticles prominent, lateral denticles reduced to prominent (fig. 4f); mandibular dentition variable in number; gular sutures divergent anteriorly and posteriorly, median portion nearly parallel; gula without prominent tubercle; furrow above eye absent or present, when present it is similar to that of fig. 5a; setigerous furrow present above or behind eye (fig. 5a); postorbital setigerous fovea absent; eye slightly tapered posteriorly. *Thorax:* prothorax with distinct, rounded angles on apical third, pronotal punctation very feeble, not umbilicate, fine ground sculpturing; profemur robust, with meso-ventral ctenidia; protibia with scopae; mesosternal fovea absent; elytra with pleural fold; metafemur not serrate; metatibia with ctenidia on one side of apex. *Abdomen:* sterna of female unmodified; sterna of male variously modified. *Aedeagus:* median lobe bulbous; parameres connate, free from median lobe or not; median foramen dorso-basal; postforamen present or not; circoforamen present; ventral ovular sclerite absent.

DISTRIBUTION: WEST INDIES (Jamaica, Cuba, Barbados); MEXICO (Michoacan); UNITED STATES (Arizona).

DISCUSSION: Included in the material used for the above description are single specimens of three undescribed species: a female from Barbados; a female from Comanja, Michoacan and a male from Yuma, Arizona.

Originally *O. volans* and *O. cameroni* were placed in *Leucorus* but members of this subgenus, as indicated above, are distinguished from *Orus* and *Pycnorus* by a bidentate or edentate labrum. In no case are there lateral denticles as on *O. volans* and *O. cameroni* (fig. 4f); the original descriptions refer to these species as bidentate with minute lateral prominence on the labrum. The mandibular dentition of *Nivorus* is variable between and within species, a mesosternal fovea is lacking, a setigerous postorbital fovea (fig. 2e) is replaced by a rather distinctive furrow containing a long seta. Additional variation is offered by an undescribed species of *Nivorus* in which the last sternum is broadly emarginate and the postforamen lacking. The male genitalia of *O. cameroni* and the undescribed species both lack a ventral ovular sclerite and an apical ostium.

In general, *Nivorus* is quite variable in the characters used to define *Leucorus*; since taxa should be defined on as many characters as possible, *O. volans* and *O. cameroni* are not retained in *Leucorus* on the basis of a questionable labrum.

KEY TO THE DESCRIBED SPECIES OF NIVORUS

1. Setigerous furrow behind eye contiguous with eye ----- CAMERONI
 Setigerous furrow behind eye separate from eye ----- VOLANS

Orus (Nivorus) cameroni Blackwelder
 (FIGS. 4a-f)

Orus (Leucorus) cameroni Blackwelder 1943:278; 1944:119.

HOLOTYPE: Trinityville, Jamaica; U. S. National Museum type number 52420; male.

DESCRIPTION. *Nivorus*; male; castaneous. *Head:* .34 mm. long, .30 mm. wide; gula with fovea on anterior portion; setigerous furrow behind and contiguous with eye; sculpturing very feeble. *Thorax:* prothorax .33 mm. long, .27 mm. wide, with longitudinal midline, feeble ground sculpturing; prosternum rugose; elytra .33 mm. long, .38 mm. wide, very minutely punctulate; mesosternum and mesopleuron with reticulate sculpturing. *Abdomen:* second and third visible sterna with a transverse impression each with a ctenidia; penultimate sternum with posterior margin shallowly emarginate, with shallow and indistinct furrow containing short, heavy setae; last sternum deeply and narrowly incised, mesal margins reflected (fig. 4a). *Aedeagus:* parameres cylindrical, expanded apically; circoforamen and prominent, hooked postforamen present; long sclerite present from post foramen to ventral base of parameres; ostium subapical.

DESCRIPTION OF FEMALE. *Spermatheca:* figs. 4d-e.

DISTRIBUTION: JAMAICA (Trinityville, Troy, Santa Cruz, Milk River, Spanish Town, Fern Gully, Montego Bay, Moneague); CUBA (Cayamas, Baragua); HISPANIOLA (Haiti); GRENADA.

VARIATION: The anterior portion of the gula may have a fovea, slight tubercle or be without either structure. One mutilated specimen has a slight transverse impression on the mesosternum, not at all similar to the mesosternal fovea of *Leucorus*. Size variation is as follows: head length .33 mm.-.37 mm., width .30 mm.-.44 mm.; prothorax length .34 mm.-.35 mm., width .27 mm.-.29 mm.; elytra length .34 mm.-.39 mm., width .34 mm.-.40 mm. The mandibular dentition is variable in number.

Orus (Nivorus) volans Blackwelder
 (FIGS. 5a-c)

Orus (Leucorus) volans Blackwelder 1943:277; 1944:119.

HOLOTYPE: Milk River, Jamaica; U. S. National Museum type number 52422; female.

DESCRIPTION. *Nivorus*; testaceous; female. *Head:* .37 mm. long, .32 mm. wide; dorsum and venter with reticulate ground sculpturing; setigerous furrow behind eye not contiguous with eye (fig. 5a); mandibles tridentate. *Thorax:* prothorax .36 mm. long, .31 mm. wide, with longitudinal midline; prosternum feebly rugose; mesosternum with reticulate ground sculpturing; mesopleuron without reticulate sculpturing, shining; elytra .37 mm. long, .38 mm. wide, punctate, without ground sculpturing. *Abdomen:* unmodified. *Spermatheca:* figs. 5b-c.

The male of this species is unknown.

DISTRIBUTION: JAMAICA (Milk River, Spanish Town).

VARIATION: Size variation is as follows: head length (no variation), width .32 mm.-.34 mm.; prothorax length .36 mm.-.38 mm., width .29 mm.-.31 mm.; elytra length .37 mm.-.39 mm., width .38 mm.-.40 mm.

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RANGE EXTENSION FOR TWO INTRODUCED DUNG BEETLES (COLEOPTERA: SCARABAEIDAE)

On April 25, and on May 16, 1964, at Lynden, Washington, I collected in dung a total of twenty *Aphodius fossor* L. and three *Onthophagus nuchicornis* (L.), so determined by Dr. Melville H. Hatch. Several *A. fossor* were likewise taken by Mr. David Milne at Anderson Island, Washington, on April 24, 1964. These are the first records for these European species in Washington, but they have been taken at Creston, B. C. and in Idaho.—LOREN RUSSELL, Zoology Division, University of Washington, Seattle, Washington.